Please check the examination details below before entering your candidate information

Candidate surname	Other names

Pearson Edexcel
Level 1/Level 2 GCSE (9–1)

Centre Number | Candidate Number

Time 1 hour 30 minutes

Paper reference **1MA1/2F**

Mathematics

PAPER 2 (Calculator)
Foundation Tier

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator, Formulae Sheet (enclosed). Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- You must **show all your working**.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Information

- The total mark for this paper is 80
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.
- Good luck with your examination.

Turn over ▶

P66304A

1/1/1/1/

P 6 6 3 0 4 A 0 1 2 0

Pearson

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 1476 to the nearest 10

1 4 7 6 → 1480

10s 1s

1480

(Total for Question 1 is 1 mark)

2 Write a fraction in the box to make the calculation correct.

$1 - \frac{3}{10} =$ $\frac{7}{10}$

(Total for Question 2 is 1 mark)

3 Here is a list of numbers.

3 3 3 3 4 4 5 7 8

Write down the mode of the numbers.

↳ most common

3

(Total for Question 3 is 1 mark)

4 Write down a 3 digit number that is a multiple of 5

End in 0 or 5

e.g. 135

(Total for Question 4 is 1 mark)

5 Write 0.4 as a percentage.

×100

D → P

0.4 × 100 = 40

40 %

(Total for Question 5 is 1 mark)

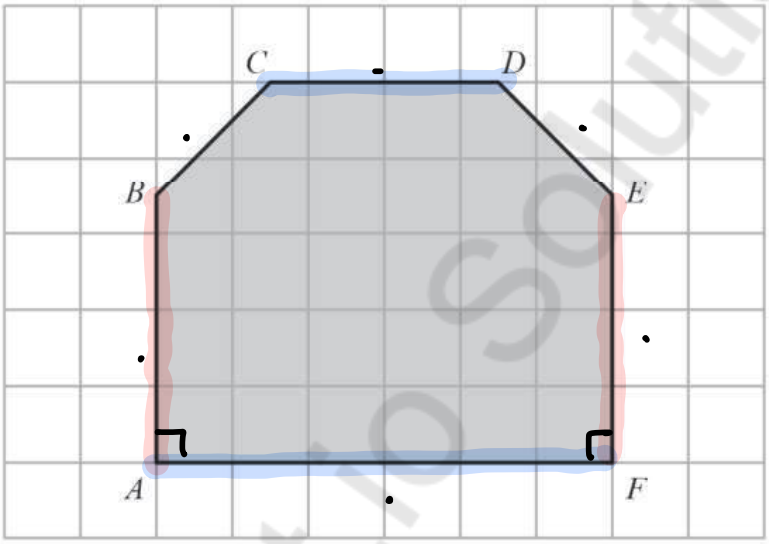
6 Write the following numbers in order of size.
Start with the smallest number.

−11 ✓ −2 ✓ 8 ✓ −7 ✓ 3 ✓ 10 ✓

−11 −7 −2 3 8 10

(Total for Question 6 is 1 mark)

7 Here is polygon *ABCDEF* on a square grid.



(a) Write down the mathematical name of the polygon.

Hexagon

(1)

(b) Which side of the polygon is parallel to the side *CD*?

does not meet CD

AF

(1)

(c) Write down a side of the polygon that is perpendicular to the side *AF*.

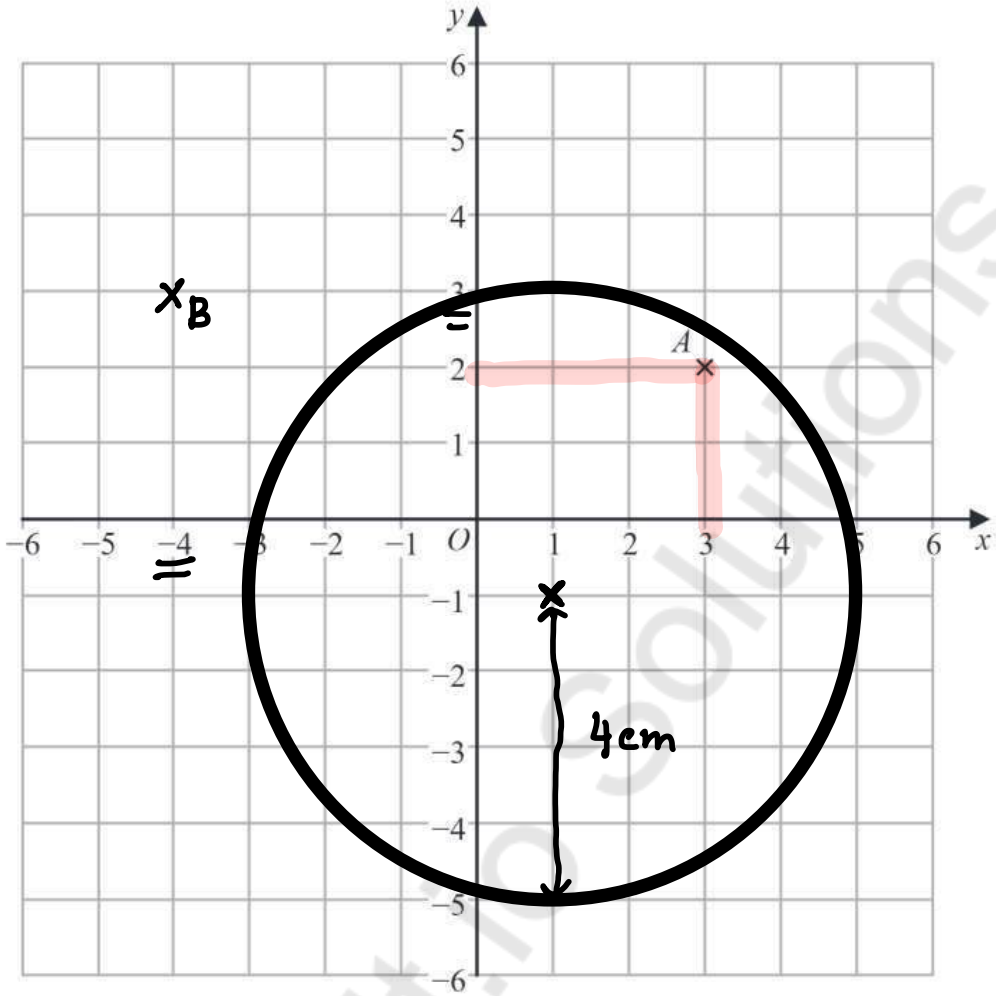
meets at 90°

AB or EF

(1)

(Total for Question 7 is 3 marks)

8 Here is a centimetre grid.



(a) Write down the coordinates of point A.

(3 , 2)

(1)

(b) On the grid, mark with a cross (×) the point with coordinates (−4, 3)
Label this point B.

x, y

(1)

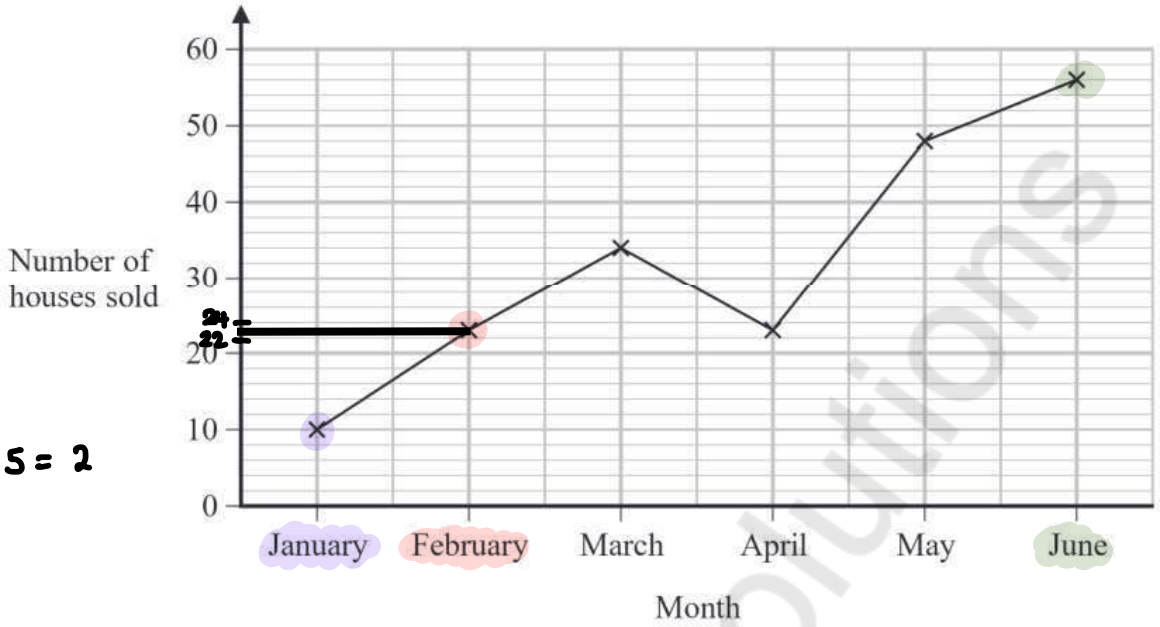
(c) On the grid, draw the circle with

centre (1, −1)
and radius 4 cm.

(2)

(Total for Question 8 is 4 marks)

9 The graph shows information about the number of houses sold by an estate agent in each of six months last year.



10 ÷ 5 = 2

(a) How many houses were sold by the estate agent in February?

23

(1)

(b) For this estate agent, write down the ratio of the number of houses sold in January to the number of houses sold in June.

January : June

10 : 56

10 : 56

(2)

(Total for Question 9 is 3 marks)

10 Sonia wants to book a holiday.
The holiday will cost £1428

Sonia will pay a deposit of £150
She will then pay the rest of the cost in 6 equal monthly payments.

How much is each monthly payment?

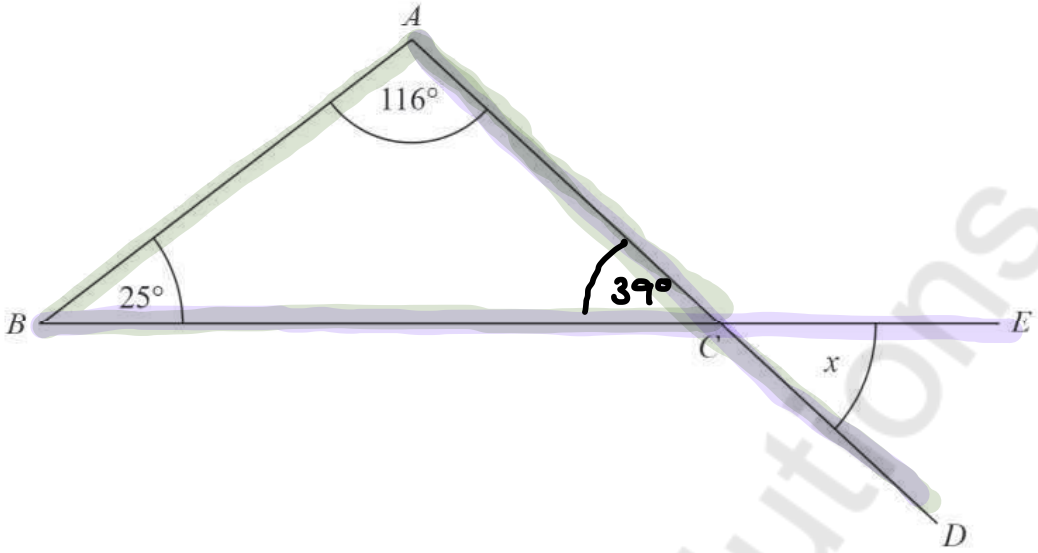
£1428 − £150 = £1278

£1278 ÷ 6 = £213

£ 213

(Total for Question 10 is 3 marks)

11 The diagram shows a triangle ABC.



ACD and BCE are straight lines.

Work out the size of the angle marked x.
Give a reason for each stage of your working.

$116 + 25 = 141°$

$180° - 141 = 39°$

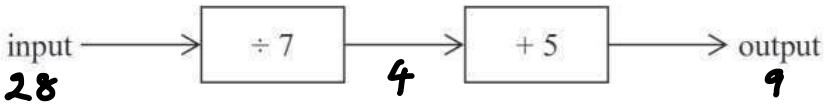
Angle ACB = 39° Angles in a triangle sum to 180°

$x = 39°$ Vertically opposite angles are equal

39 °

(Total for Question 11 is 3 marks)

12 Here is a number machine.



(a) Work out the output when the input is 28

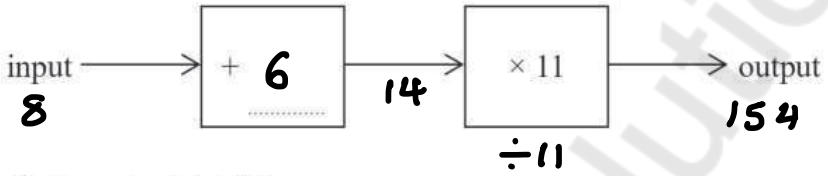
28 ÷ 7 = 4

4 + 5 = 9

9

(1)

Here is a different number machine.
The number machine is not complete.



When the input is 8, the output is 154

(b) Complete the number machine.

(2)

154 ÷ 11 = 14

8 + 6 = 14

(Total for Question 12 is 3 marks)

13 Sophie works in a bed shop.
During the last three months she sold 198 beds. ✓

59 beds were sold without a mattress. ✓
45 beds were double beds. ✓
17 of the single beds were sold without a mattress. ✓
67 of the 83 king size beds were sold with a mattress ✓

Use this information to complete the two-way table.

53 + 67 = 120
139 − 120 = 19
70 − 17
198 − 59

	Single	Double	King size	Total
With mattress	53	19	67	139
Without mattress	17	26	16	59
Total	70	45	83	198

45 + 83 = 128
198 − 128 = 70
45 − 19
83 − 67

(Total for Question 13 is 3 marks)

14 The box below contains three mathematical symbols.

Less than

=	<	>

Equals to
Greater than

From the box, choose a symbol to make each of the following statements correct.

(i) $\frac{5}{8}$ ..... $\frac{2}{8}$ **>**

(1)

(ii) -2×-3 ..... $-3 + 9$ **=**

6 6

(1)

(Total for Question 14 is 2 marks)

15 The table shows information about the number of social media accounts used by each of 300 students.

Number of social media accounts	Frequency	Running total
0	3	3
1	57	60
2	84	144
3	75	219 ← median lies here
4	81	300

(a) Work out the total number of social media accounts used by these students.

$0 \times 3 = 0$

$1 \times 57 = 57$

$2 \times 84 = 168$

$3 \times 75 = 225$

$4 \times 81 = 324$

$57 + 168 + 225 + 324 = 774$

774

(2)

(b) Find the median number of social media accounts used by these students.

↳ middle

$300 \div 2 = 150$th

3

(2)

(Total for Question 15 is 4 marks)

16 On a scale drawing, a building has length 12.4 cm and width 9.4 cm.
The real length of the building is 62 metres.

Work out, in metres, the real width of the building.

÷100
100cm = 1m
x100

Drawing : Real

12.4cm : 62m

÷12.4 (12.4cm : 6200cm) ÷12.4

1cm : 500cm

x9.4 (9.4cm : 4700cm) x9.4

$4700 \div 100 = 47$m

47 metres

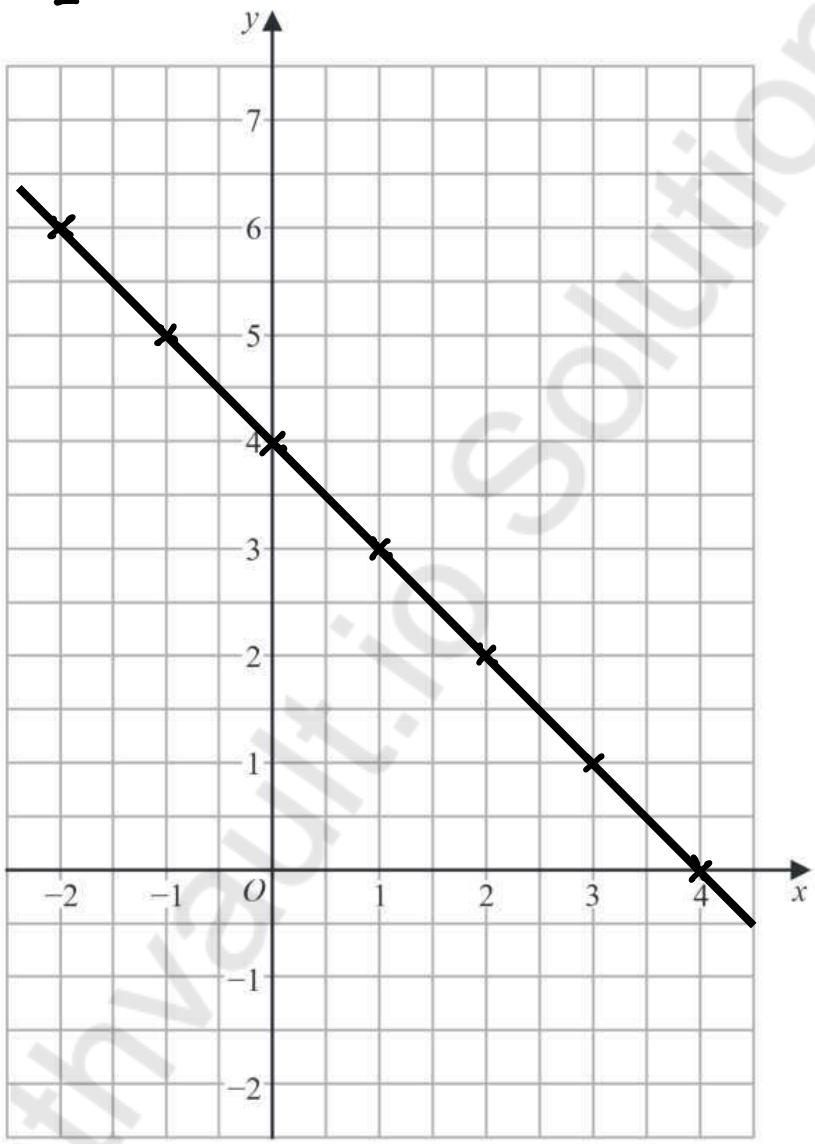
(Total for Question 16 is 3 marks)

17 On the grid below, draw the graph of $y = 4 - x$ for values of x from -2 to 4

x	-2	-1	0	1	2	3	4
y	6	5	4	3	2	1	0

$4 - -2$ $\quad$ $4 - -1$ $\quad$ $4 - 0$

(-2, 6)
(-1, 5)
(0, 4)
(1, 3)
(2, 2)
(3, 1)
(4, 0)



(Total for Question 17 is 3 marks)

18 This sign was in a doctor's waiting room.

> 115 appointments were missed last month.
>
> These missed appointments were a total of 25.3 hours.

Work out the mean length of time for each missed appointment.
Give your answer in minutes.

$$\text{Mean} = \frac{\text{total time}}{\text{no. of appts}}$$

$$= \frac{1518}{115}$$

$$= 13.2 \text{ minutes}$$

$1\text{h} = 60 \text{ mins}$ (×60)

$25.3 \times 60 = 1518$

13.2 ..... minutes

(Total for Question 18 is 3 marks)

19 Nimra buys a 3 kg box of sweets for £17.60

She puts the sweets into bags to sell.
Each bag contains 150 g of sweets.

Nimra fills as many bags as possible.
She will sell each bag for the same price.

Nimra wants to make a profit of at least 35%

Assuming she sells all the bags,
what is the lowest price Nimra should charge for each bag?

Bags : 3000g ÷ 150g = 20

1 kg = 1000g
×1000

3 × 1000 = 3000g

Profit : 100% + 35% = 135%

135% ÷100 → 1.35

1.35 × 17.60 = £23.76

Price : £23.76 ÷ 20 = 1.188

= £1.19

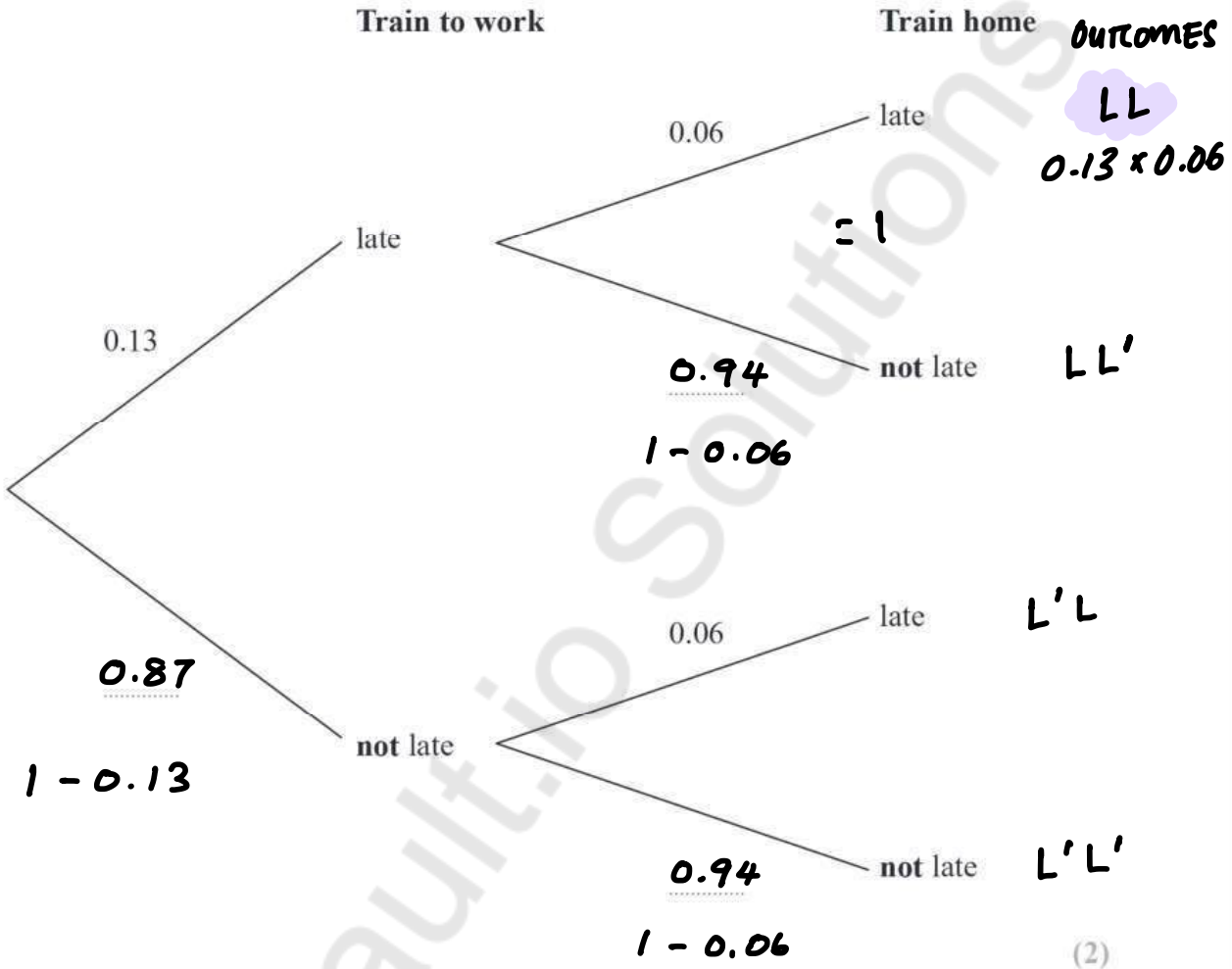
£ 1.19

(Total for Question 19 is 5 marks)

20 Lorena gets a train at the same time each morning to go to work.
She gets a train at the same time each evening to come home.

The probability tree diagram shows the probabilities of each train arriving late.

(a) Complete the probability tree diagram.



(2)

For a day that Lorena goes to work,

(b) work out the probability that the train to work and the train home will both arrive late.

0.13 x 0.06 = 0.0078

0.0078

(2)

(Total for Question 20 is 4 marks)

21 (a) Simplify $(x^3)^5$

$(x^a)^b = x^{a \times b}$

$(x^3)^5 = x^{3 \times 5} = x^{15}$

x^{15}

(1)

(b) Expand and simplify $4(x + 3) + 7(4 - 2x)$

$4x + 12 + 28 - 14x$

$-10x \quad +40$

$-10x + 40$

(2)

(c) Factorise fully $15x^3 + 3x^2y$

HCF of 15 and 3 : 3

HCF of x^3 and x^2 : x^2

$x \times x \times x \quad x \times x$

$3x^2 \times 5x = 15x^3$

$3x^2 \times y = 3x^2y$

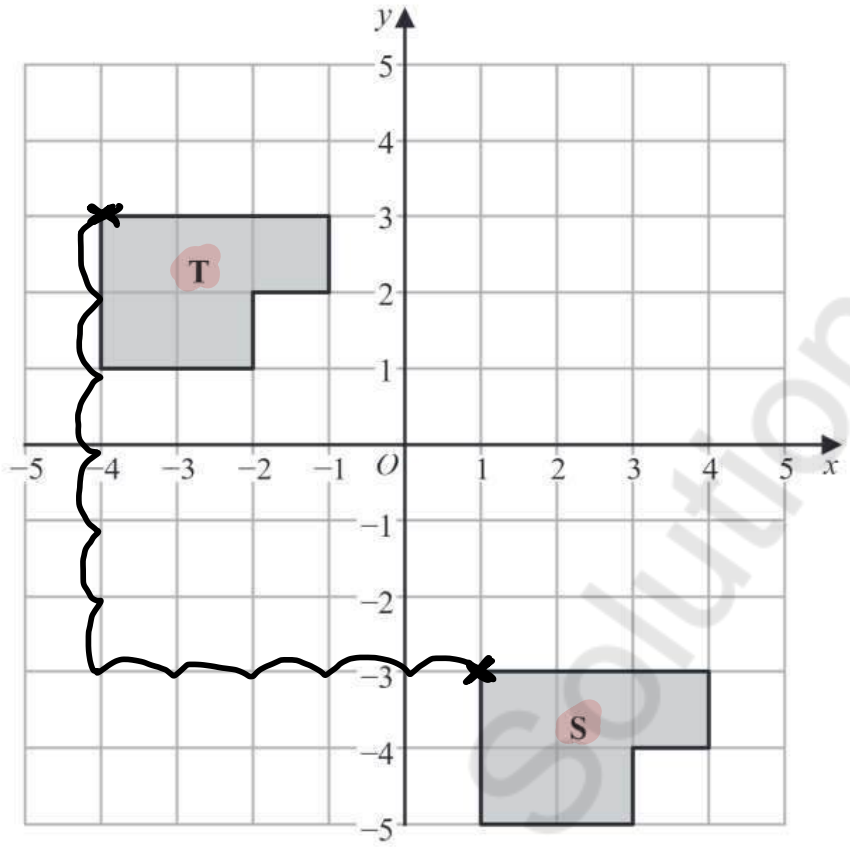
$3x^2(5x + y)$

$3x^2$ (HCF of $15x^3$ and $3x^2y$) $(5x + y)$

(2)

(Total for Question 21 is 5 marks)

22



Describe fully the single transformation that maps shape **S** onto shape **T**.

Translation by $\begin{pmatrix} -5 \\ 6 \end{pmatrix}$

(Total for Question 22 is 2 marks)

23 The length of a football pitch is 90 metres, correct to the nearest metre.

Complete the error interval for the length of the football pitch.

↳ 1m

$1 \div 2 = 0.5$

$90 + 0.5 = 90.5$

$90 - 0.5 = 89.5$

89.5 m ⩽ length < 90.5 m

(Total for Question 23 is 2 marks)

24 Festival A will be in a rectangular field with an area of 80 000 m²
The greatest number of people allowed to attend Festival A is 425

Festival B will be in a rectangular field 700 m by 2000 m.
The greatest number of people allowed to attend Festival B is 6750

The area per person allowed for Festival B is greater than the area per person allowed for Festival A.

(a) How much greater?
Give your answer correct to the nearest whole number.

FESTIVAL A

80,000m²

80,000 ÷ 425 = 188.235...
m² per person

FESTIVAL B

2000m
700m

A = l x w
= 2000 x 700
= 1,400,000 m²

1,400,000 ÷ 6750
= 207.407
m² per person

207.407 − 188.235 = 19.1724...
= 19 m²

19 m²

(4)

Callum says,

"300 cm² is the same as 3 m² because there are 100 cm in 1 m so you divide by 100"

area length

Callum's method is wrong.

(b) Explain why.

100 cm x 100 cm = 1m²

There are 10,000cm² in 1m²

(1)

(Total for Question 24 is 5 marks)

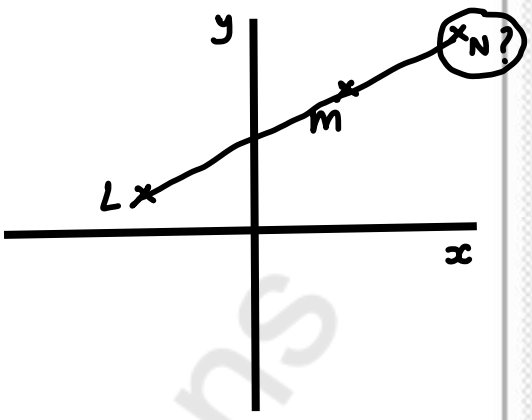
25 The points L, M and N are such that LMN is a straight line.

The coordinates of L are $(-3, 1)$

The coordinates of M are $(4, 9)$

Given that $LM : MN = 2 : 3$,

find the coordinates of N.



Distance LM

$4 - -3 = 7$

$9 - 1 = 8$

LM : MN

2 : 3

÷2, ×3

Distance MN

$7 \div 2 = 3.5 \times 3 = 10.5$

$8 \div 2 = 4 \times 3 = 12$

M = (4, 9)

$4 + 10.5 = 14.5$

$9 + 12 = 21$

N (14.5, 21)

(14.5, 21)

(Total for Question 25 is 4 marks)

26 A new phone cost £679

The value of the phone decreases at a rate of 4% per year.

Work out the value of the phone at the end of 3 years.

Compound depreciation

Final amount = original × multiplier^{n} ← time

↓

100% − 4% = 96%

96% ÷100→ 0.96

$= 679 \times 0.96^{3}$

$= 600.735744$

$= 600.74$

£ 600.74

(Total for Question 26 is 3 marks)

27 In Spain, Sam pays 27 euros for 18 litres of petrol.
In Wales, Leo pays £40.80 for 8 gallons of the same type of petrol.

1 euro = £0.85 ×0.85

4.5 litres = 1 gallon ×4.5

Sam thinks that petrol is cheaper in Spain than in Wales.

Is Sam correct?
You must show how you get your answer.

Spain

€27 = 18L

×2 → €54 = 36L ×2

×0.85 → £45.90 = 36L

Wales

£40.80 = 8 gallons ×4.5

£40.80 = 36L

£45.90 > £40.80

Sam is wrong.

(Total for Question 27 is 4 marks)

28 Solve the simultaneous equations

$5x + 2y = 27$

$6x + 4y = 28$

$\xrightarrow{\times 2}$ $10x + 4y = 54$

$6x + 4y = 28$

$4x = 26$

$\div 4 \quad \div 4$

$x = 6.5$

$5x + 2y = 27$

$5(6.5) + 2y = 27$

$32.5 + 2y = 27$

$-32.5 \quad -32.5$

$2y = -5.5$

$\div 2 \quad \div 2$

$y = -2.75$

$x =$ 6.5

$y =$ −2.75

(Total for Question 28 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS